

Builder Notes

Brick Veneer Construction: Advanced Flashing—Roofs and Chimneys

Because the thickness of a single brick wythe will not resist moisture penetration, flashing should be installed to redirect any water that has passed through the brick veneer construction to the exterior. Areas around roofs and chimneys, in particular, may require more care to properly install the flashing, but its importance remains equally as great.

Flashing Roof/Wall Intersections

To mitigate water penetration, code requires a nominal 1-inch air space between the sheathing and the interior face of the brick. In addition, code requires through-wall flashing and weeps above the intersecting roof. Roof flashing or counter flashing that is typically installed at this interface is not enough to redirect water that penetrates to the interior of the brick. Proper detailing requires through-wall flashing above the level of the counter flashing.

Flashing at the roofline should consist of a three-step flashing system:

Step 1. Install base flashing under the shingles and above the roofing felt;

Step 2. Install counter flashing above the base flashing to prevent water that runs down the outside face from going behind the base flashing; and

Step 3. Install through-wall flashing through the entire thickness of the brick veneer to redirect moisture that has penetrated the veneer back to the outside.

In some cases, Steps 2 and 3 can be combined into one piece of flashing (see Figure 1). Where a roof is sloped, stepped flashing will be necessary.

Flashing Chimneys

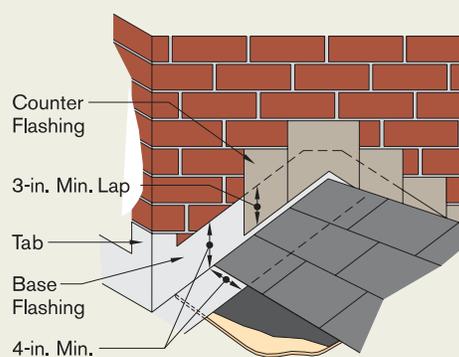
Chimneys, with their unique construction, pose three primary areas of concern with regard to the proper use and installation of flashing. These concerns include:

- the base of the chimney,
- the intersection of the chimney with the roof, and
- the chimney crown.

The Base

The base of the chimney is constructed similarly to a brick veneer wall. Flashing must be used at the joint between the foundation and the brickwork. The flashing should extend through the brick veneer wythe, turn up behind the exterior face of the brick, and end in a mortar joint in

FIGURE 2



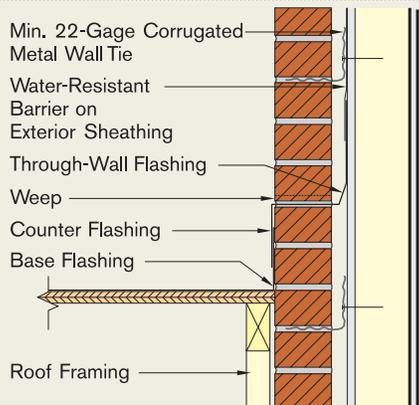
Flashing at Roof /Chimney Intersection

the interior wythe. Weeps should be placed immediately above the flashing and spaced no more than every third brick (or 24 inches o.c.).

Intersection with the Roof

The intersection of the roof and the chimney must be properly flashed to prevent water from entering the interior of the structure. Base and counter flashing must be installed at the interface. Base flashing should be placed first. Start with the lower ends of the chimney faces running perpendicular to the ridgeline, with tabs at each corner. The base flashing should extend a minimum of 4 inches along the roof and 4 inches up the chimney face (see Figure 2). Counter flashing is then lapped over the base flashing for a minimum of 3 inches, extended

FIGURE 1



Through-Wall Flashing at Roof Interface

through the chimney wall, and turned up at an angle into the air space to collect any water draining down the back of the brickwork (see Figure 3). The three-step flashing model for roof/wall intersections can also be used. All joints and laps in the base and counter flashing must be completely sealed.

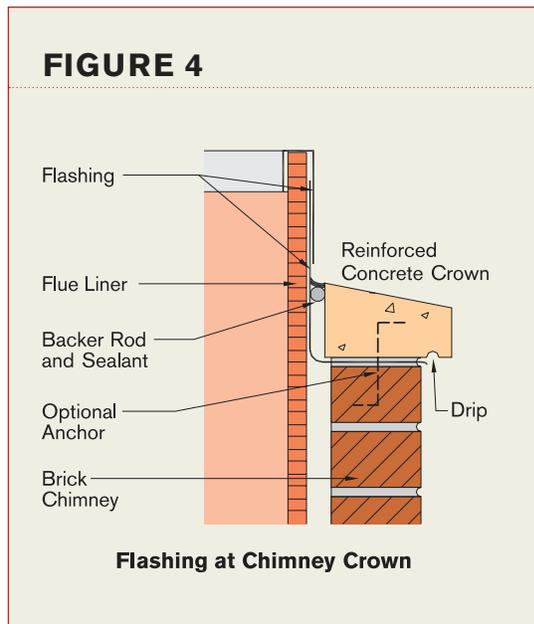
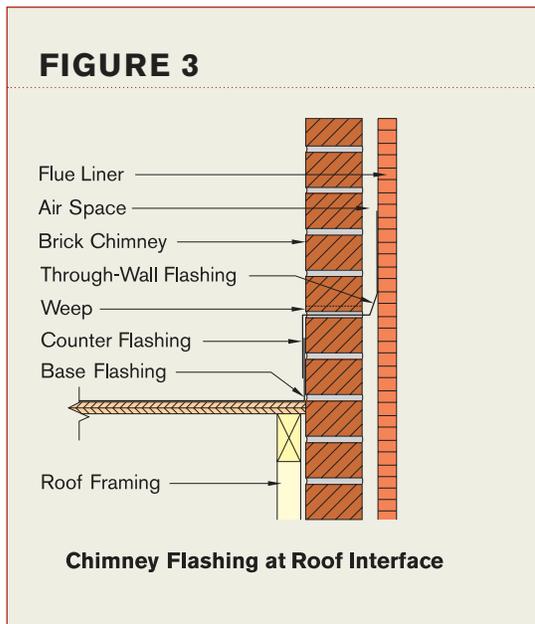
The Chimney Crown

All too often, the area around the chimney crown is overlooked as a

source of moisture penetration. Using flashing and sealants in this area prevents water from entering the space between the chimney wall and the flue liner. Place the first piece of flashing directly below the chimney crown, extending past the inside of the brick wythe, and turning up against the outer face of the flue liner (see Figure 4). This flashing should form a drip above the outside chimney face,

especially if the crown does not have an overhang. Fold a second piece of flashing over the top of the flue liner and extend it down the outside to lap the first piece of flashing (see Figure 4).

The information contained in these *Builder Notes* is based on the available data and the combined experience of engineering staff at the Brick Industry Association. The information contained herein must be used in conjunction with good technical judgment and a basic understanding of the properties of brick masonry. *Builder Notes* are created by and for the use of the Brick Industry Association. Unauthorized reprints or reproductions are prohibited. ©2007 Brick Industry Association.



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